Name:

at1113exam: Expand, factor, and solve quadratics (v316)

1. Expand the following expression into standard form.

$$(7x + 5)(7x - 5)$$

$49x^2 - 35x + 35x - 25$

$49x^2 - 25$

2. Solve the equation.

$$(2x - 9)(4x + 7) \;=\; 0$$

$x = \frac{9}{2}$ $\qquad$ $x = \frac{-7}{4}$

3. Expand the following expression into standard form.

$$(4x - 5)(7x - 6)$$

$28x^2 - 24x - 35x + 30$

$28x^2 - 59x + 30$

4. Expand the following expression into standard form.

$$(4x - 7)^2$$

$16x^2 - 28x - 28x + 49$

$16x^2 - 56x + 49$

5. Factor the expression.

$$49x^2 - 9$$

$$(7x + 3)(7x - 3)$$

6. Solve the equation with factoring by grouping.

$$15x^2 + 20x + 18x + 24 \;=\; 0$$

$$(5x + 6)(3x + 4) = 0$$

$$x = \frac{-6}{5} \qquad x = \frac{-4}{3}$$

7. Solve the equation.

$$9x^2 - 32x \;=\; 2x^2 - 3x - 4$$

$$7x^2 - 29x + 4 = 0$$

$$(7x - 1)(x - 4) = 0$$

$$x = \frac{1}{7} \qquad x = 4$$

8. Factor the expression.

$$x^2 + 7x - 18$$

$$(x - 2)(x + 9)$$